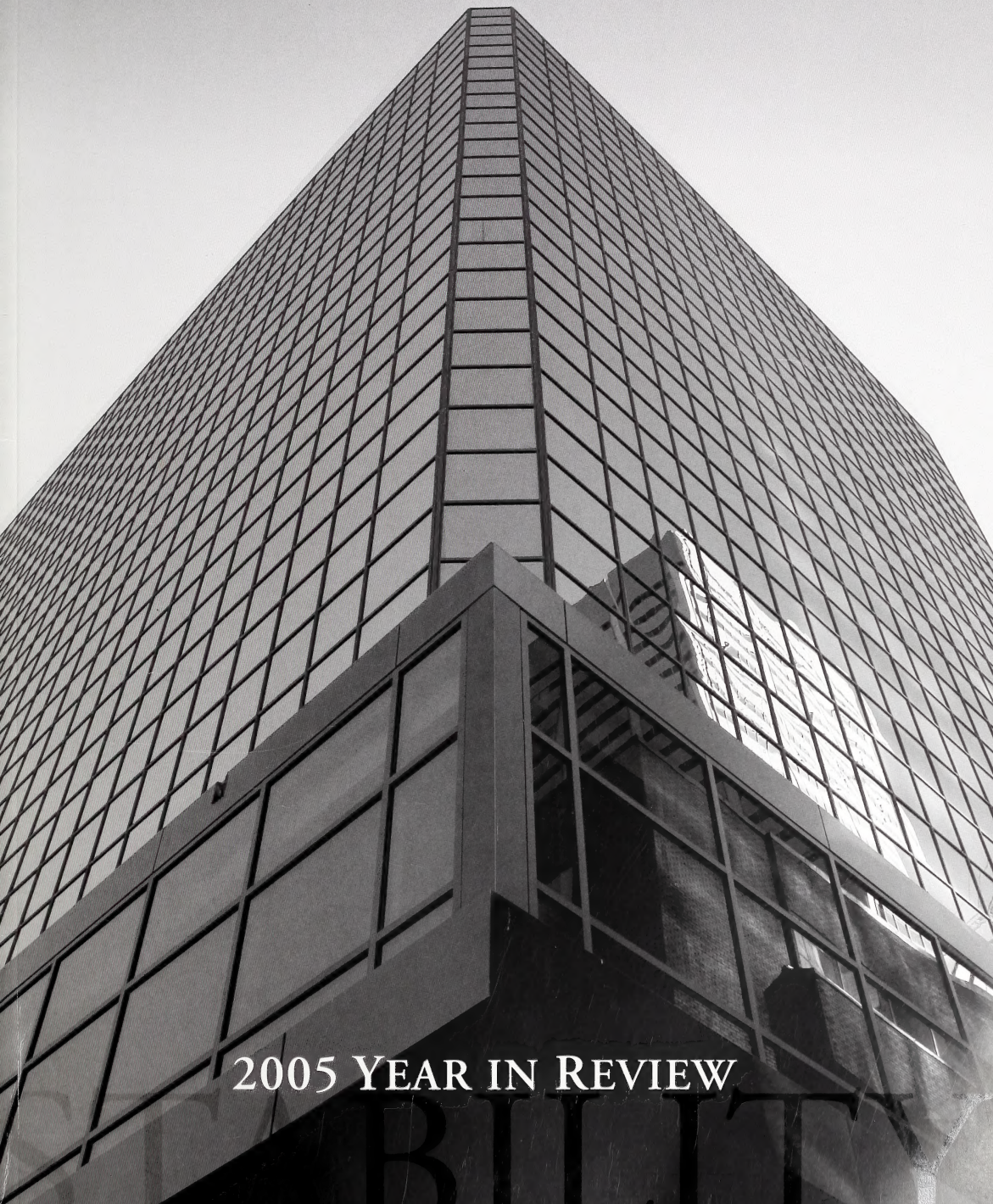
EUB Alberta Energy and Utilities Board



# 2005 Year in Review

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Alberta Energy and Utilities Board
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**About This Publication**
The EUB's *Year in Review* provides Albertans with information about what the EUB did in the past year, along with an overview of activity in Alberta's energy and utilities sectors.


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# Board Members

From left to right, front row: John Nichol, Gordon Miller, Neil McCrank, Tom McGee

Back row: Graham Lock, Jim Dilay, Ian Douglas, Arden Berg, Brad McManus, Bonnie McGinnis (Board Secretary)

# Message from the Chairman

**IN THE MIDST OF ALBERTA'S** thriving economy and unprecedented growth, competing interests for land and resources have placed the EUB squarely in the middle of some of the most contentious issues our province has ever experienced. In addition, since mid-1998, when I began my term here as Chairman, there have been significant changes in Alberta's oil and gas and utilities sectors. For example, unconventional oil and gas have come to the forefront, the electricity business has been restructured, new electricity transmission infrastructure is needed, and interest continues to grow in resource and utilities development—from Albertans and from abroad.

But there are many things that have stayed the same over that time; those things give us stability and maintain our focus. Our talented staff have guaranteed the continuity of our mission: that we ensure the discovery, development, and delivery of Alberta's energy resources and utility services take place in a manner that is fair, responsible, and in the public interest.

Our mission—and our commitment to that mission—has remained stable, but the regulations and processes behind it are continually changing. Those are changes that we initiate based on feedback from our stakeholders. We must always examine ourselves and be nimble enough to ensure we are responsive and relevant. That's what good regulators do.

As you flip through these pages, you'll see pictures of EUB staff who have been with us anywhere between 5 and 35 years. That mix of experience allows us to keep up with a changing Alberta. I applaud the commitment and wisdom of these people and their many colleagues; their work is not only appreciated, but vital to the very fabric of our province.

Some examples of that work include the transition to unconventional oil and gas. As our conventional resource base decreases, industry has shifted its focus to oil sands and coalbed methane, which bring with them specific concerns about socioeconomic and environmental impacts. As we continue to define what is in the public interest, we seek greater integration with other agencies to ensure a comprehensive and streamlined approach to processes and results.

There is no doubt that we are in the middle of a transition and, as part of it, Alberta is emerging as an energy power on the world stage. We remain a stable influence on how that transition takes place.

On the utilities side, as our population grows, the demands on our electricity infrastructure grow as well. With no new transmission development in over 20 years, the time has come for upgrades. Our role is to balance the competing interests that are emerging and to find solutions that work for all Albertans in the form of a reliable and economic system that minimizes impacts along the way.

The EUB is centre-stage as Albertans and citizens of the world watch to see how we manage the resources Albertans are lucky enough to own. Through all this change, we will proceed with a measured and sustained response, ensuring that the public interest is always at the foundation of resource development and utilities services.

*Neil McCrank*
*Chairman*

# CHAIRMAN'S EXECUTIVE COMMITTEE

From left to right, front row: Forrest Kvemshagen (Chief Information Officer and Executive Manager, Information and Systems Services), Neil McCrank (Chairman), Diane Earle (Executive Manager, Corporate Services), Bob Heggie (Executive Manager, Utilities)

Back row: Bonnie McGinnis (Board Secretary), Andy Warren (Executive Manager, Board Projects), Michael J. Bruni (Executive Manager, Energy), Doug Larder (General Counsel and Executive Manager, Law), Dwayne Waisman (Executive Manager, Public Safety/ Field Surveillance), John Giesbrecht (Chief Financial Officer and Executive Manager, Finance)

# Role of the EUB

The mission of the EUB is to ensure that the discovery, development, and delivery of Alberta's energy resources and utility services take place in a manner that is fair, responsible, efficient, and in the public interest.

### Who We Are

The EUB is a provincial quasi-judicial agency that regulates Alberta's energy resources and utilities. Although the EUB is independent, the Alberta Minister of Energy is responsible for the EUB in the government structure.

### What We Do

The mission of the EUB is to ensure that the discovery, development, and delivery of Alberta's energy resources and utility services take place in a manner that is fair, responsible, efficient, and in the public interest. In assessing the public interest, the EUB has regard for social, economic, and environmental impacts.

We regulate the development of Alberta's energy resources—oil, natural gas, oil sands, coal, and electrical energy—and the pipelines and transmission lines to move the resources to market. On the utilities side, we regulate rates and terms of service of investor-owned natural gas, electric, and water utility services, certain municipally owned electric utilities, and the major intra-Alberta gas transmission system to ensure that customers receive safe and reliable service at just and reasonable rates.

The EUB also includes the Alberta Geological Survey, or AGS. AGS's role is to provide geoscience information and expertise to government, industry, and the public to support the exploration, development, and conservation of Alberta's energy and mineral resources.

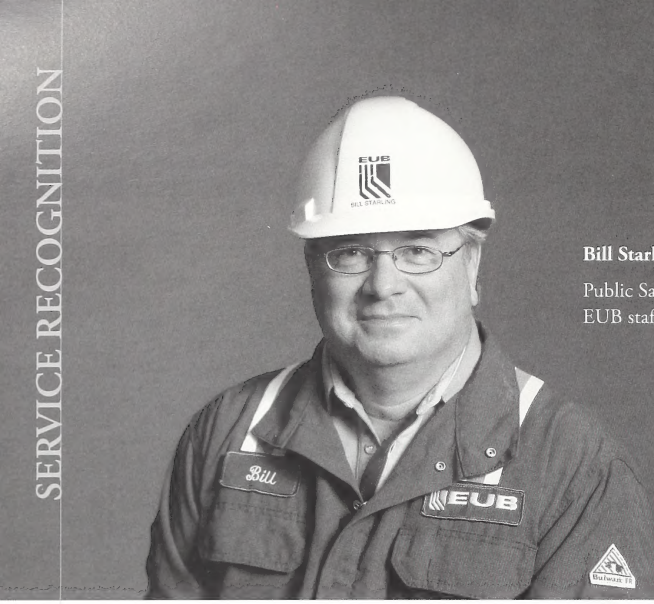
### Energy Regulation

If a company wants to build or expand a facility or drill a well, it must ask the EUB for an approval. All relevant regulations must be met or exceeded and concerns raised through public consultation must be adequately addressed.

The EUB ensures that any person with the potential to be directly and adversely affected by an application has an opportunity to participate in a public hearing where parties bring forward evidence for consideration by a panel of EUB decision makers.

Should developments proceed and become operational, the EUB continues to monitor them, conducting thousands of inspections across the province each year, to ensure that regulations are complied with throughout the life of any operation.

When oil and gas facilities are no longer needed, the EUB ensures that sites are properly abandoned at no cost to taxpayers.




**Bill Starling**

Public Safety/Field Surveillance
EUB staff member since 1981

## Utilities Regulation

The EUB's role in the utilities sector includes ensuring that regulated utility rates are fair (the EUB does not regulate competitive offers from utility companies, such as contracts), ensuring that customers receive safe and reliable service from their utility company, and assessing the need for new facilities, such as transmission lines and substations, and approving their construction and operation.

The energy cost component of natural gas bills and a portion of some electricity bills are tied to actual monthly commodity prices. The EUB verifies that this component reflects the cost of purchasing the energy in the free market.

Utility companies must apply for changes in rates, which are thoroughly scrutinized by the EUB in public hearings. Different groups participate in these hearings to represent varied customer interests. The EUB ensures that rates are set at the lowest possible level while still allowing the utility to be financially viable and provide safe and reliable service.

The EUB also ensures that customers receive good service. The EUB requires utility companies to report quality-of-service measures and standards quarterly. The EUB also investigates individual utility complaints to ensure that customers are treated fairly.

The EUB has received attention recently on its role in approving transmission line development. When Alberta needs additional transmission capacity, the Alberta Electric System Operator (AESO) identifies this need and submits an application to the EUB for approval.

If the EUB decides there is a need, then the AESO assigns the project to one or more transmission facility owners (TFOs) to build the needed facilities. The TFOs consult with stakeholders and landowners and evaluate specific sites and routes in detail. The TFOs then apply to the EUB to construct and operate the proposed transmission facilities. If necessary, a hearing is held.

## Good Regulations Evolve

Good regulations evolve. Over time, new factors develop that require revisions and improvements so that regulations remain relevant and continue to meet their objectives.

At the EUB, stakeholder input guides and informs regulatory change. Industry, environmental groups, other government departments and agencies, Alberta communities, and individual citizens all have a stake in the responsible development of our energy resources, each with their own particular perspective and emphasis. For the EUB to develop sound regulations, it is important that we understand and balance these perspectives. Stakeholder engagement is a key strategy in making this a reality.

# Working with Albertans

### Wells

25 815 new approvals (sweet single well, sweet multiwell pad, sour single well, sour multiwell pad, sour well, critical sour well)

### Production Facilities

3586 new sweet and sour facilities: oil and gas batteries, satellites, compressor stations, tank farms, pump stations

773 modifications to facilities

No new sulphur recovery gas processing plants

10 modifications to sulphur recovery gas processing plants

### Pipelines

16 704 pipeline licenses for new construction and amendments to existing pipeline licences

### In Situ Oil Sands

175 gas production applications

38 new and amended primary recovery scheme applications

28 new and amended commercial scheme applications

12 new and amended experimental scheme applications

13 commingling applications

### Mineable Oil Sands

1 application for new or expansion of existing mining or plant projects

### Environmental Review

414 sour gas flare permits

### Coal

26 registered applications for new or modified coal projects relating to mining operations

### Refineries (oil sands, oil, or gas)

4 industrial development permits registered

### Reservoir Development

2040 well spacing applications

1137 commingling notification forms

1879 applications for conventional oil and gas reservoir schemes (enhanced recovery, disposal, commingling, and others)

### Utilities

185 electric facility applications (applications for transmission lines and substations, power plants, industrial system designations, electrification association and service area change)

223 gas utility applications

196 electric utility applications

60 *Municipal Government Act* applications (franchise agreements)

67 other types of applications (sale of assets, milk price orders, exemptions)

8 water utility applications

0 nonroutine complaints

### EUB Hearings

95 hearings

- 28 energy related
- 67 utilities related

### Appropriate Dispute Resolution Program

154 EUB staff facilitations initiated

11 mediations between landowners and companies

6 mediations between companies

# Maintaining Responsible and Efficient Energy Development

**IN 2005**, the EUB's Energy Team focused on a number of important regulatory initiatives relating to the oil and gas industry that helped maintain a balance among different perspectives and issues throughout the province.

### New Directive Tightens Compliance for Oil and Gas Industry

Industry's compliance rate with major EUB regulations was at a record 98.2 per cent in 2005, up from 98 per cent in 2004 and 97 per cent in 2003. In July 2005, the EUB unveiled an updated series of processes designed to protect public safety, minimize environmental impacts, preserve equity, and ensure conservation of resources.

*Directive 019: EUB Compliance Assurance—Enforcement* replaces a series of EUB enforcement ladders that were unveiled in 1999 and set out the rules for enforcement when a licensee is not complying with EUB requirements.

The new directive clarifies that EUB staff will impose enforcement actions in the event of noncompliance. These actions could include one or more of the following: noncompliance fees, self-audits or inspections, increased audits or inspections, third-party audits or inspections, partial or full suspensions, and suspension and/or cancellation of permits, licences, or approvals.

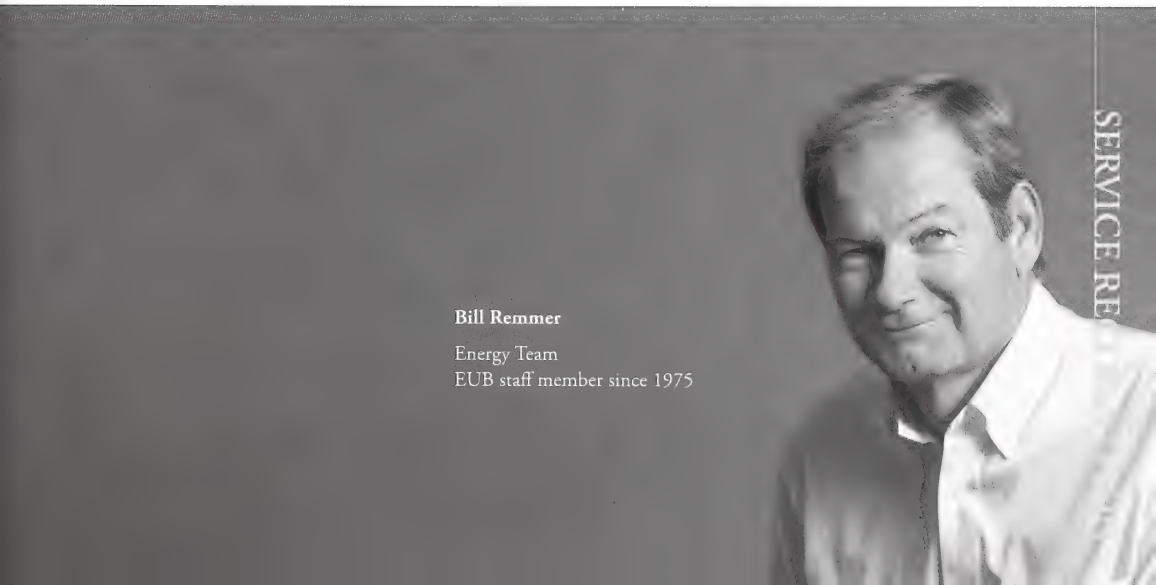
Other changes include

- manual escalation of enforcement actions for persistent noncompliance,
- the basing of enforcement actions on a predetermined risk assessment, and
- improved access to compliance information.

### Enhanced Oil Recovery

Enhanced oil recovery (EOR) is the process of injecting fluids to improve the amount of oil produced from a reservoir.

In 2005, the EUB continued updating its approach to regulating new and amended EOR activities. The new EOR application process leads to greater standardization of EUB expectations and application requirements, which improves the efficiency and quality of the application process.




**Bill Remmer**

Energy Team
EUB staff member since 1975


This has resulted in industry submitting more complete applications, thereby improving the efficiency of the regulatory process and reducing application turnaround times.

### Well Spacing

*Bulletin 2005-08* outlined changes to the EUB's process for filing and assessing well-spacing applications. Changes were approved for higher baseline well densities in certain areas of the province, the introduction of three risk-based application processing models, and automation of the application process. A fourth proposed change, which aimed to eliminate the need to notify surface rights owners when submitting well-spacing applications, was revised after reviewing public input. The notification requirement remains in place and will be expanded to include for information purposes only all Freehold mineral owners in the surrounding area.

Industry's compliance rate with major EUB regulations was at a record 98.2 per cent in 2005, up from 98.0 per cent in 2004 and 97.0 per cent in 2003.

# Safe, Reliable, and Economic Utility Services

**ONE OF THE MAIN FUNCTIONS** of the EUB is to establish just and reasonable rates for utility services. The need for regulations arises because utilities provide their services on a monopoly basis in the absence of competition. The EUB's role is to balance the interests of customers and the utility by setting rates that are fair to both. On one hand, the EUB must allow the utility an opportunity to earn sufficient revenue through rates that will include a fair return on investment. On the other hand, these rates must be just and reasonable for customers and the quality of service must be safe and adequate.

In addition, the EUB is charged with evaluating applications for power plants and transmission lines in the public interest.

Originally established in 1915, the EUB's role has evolved over time. Today, in addition to the roles described above, the EUB has taken new initiatives in areas such as audit and compliance, regulation of certain municipally owned utilities, and more flexible consultation processes.

2005 was busier than ever, with the issuance of some significant decisions and approvals of new projects that will ensure Albertans get the utilities services they expect.

### Electric Transmission Expansion

The EUB's Utilities staff processed 725 applications and issued 80 decisions in 2005. One of the most significant decisions was the Alberta Electric System Operator (AESO) Edmonton-Calgary 500 kilovolt (kV) *Decision 2005-031*, issued in April 2005. The decision approved the need to strengthen the Edmonton-to-Calgary electric transmission system in order to alleviate future constraints and improve efficiencies. Hearing participants agreed that the transmission development was necessary and focused on two different concepts: the AESO's preferred 500 kV alternative and a 240 kV option. The EUB examined these two possibilities and concluded that the 500 kV concept was the appropriate way to address the need in terms of system planning and performance, routing considerations, and economics.

In May 2005, the EUB issued *Decision 2005-049*, which approved the need for 240 kV development of the transmission system from the Pincher Creek area to the Lethbridge area to alleviate constraints and improve system efficiency

### Tariff Billing Code

Electricity and gas customers are entitled to timely and accurate billing. The way information is exchanged between distributor and retailer is vital, now that different companies may perform each service. Through a consultative process with industry participants, EUB Utilities staff drove retail billing standards in the province by providing oversight and coordination to the work associated with the design, development, and implementation of the Tariff Billing Code.

The Tariff Billing Code sets out the business processes, transactions, and compliance rules that support the transfer of billing information from distributor to retailer in a standardized manner with respect to content and format. It also defines the roles, responsibilities, and obligations of the market participants with respect to the management of information.

The July 1, 2005, implementation of the Regulated Default Supply Regulation was successful, with EPCOR Energy Alberta Inc. and FortisAlberta achieving compliance through use of the Tariff Billing Code requirements.

### Utility Audit and Compliance Group

One of the EUB's key objectives is to promote public confidence in the regulatory process. Established in 2004, the EUB's Utility Audit and Compliance Group plays a primary role in promoting public confidence by monitoring finances and operations of regulated utilities and by monitoring compliance of regulated entities with

all aspects of applicable codes of conduct. In addition, the group conducts audits of regulated utilities.

The Utility Audit and Compliance Group issued six audit reports in 2005, all with a clean audit opinion. These audits were conducted in accordance with a multiyear audit plan developed in 2004 and are publicly posted on the EUB Web site.

In 2005, the EUB continued to work with regulated entities to develop and approve their compliance plans under the applicable codes of conduct. Under the *Gas Code of Conduct Regulation*, the EUB approved two compliance audits, both issued with clean audit opinions.

### Regulatory Efficiency

The EUB continues to improve regulatory effectiveness and efficiency without compromising fairness to our stakeholders. In 2005, measures were taken to simplify and streamline the processes for settlements, prehearing application processing and hearing costs, electric transmission interconnection applications, and certain types of need approvals.

### Concerns

In 2005, the EUB handled 2212 utility complaints, compared with 3435 in 2004 and 3902 in 2003. The top three areas of concern were bill formats, billing errors, and disputes regarding estimates. The EUB has a concerns line for customers of regulated utility services to call if they have been unable to resolve a dispute with their service provider or if they feel mistakes are not being adequately addressed.

To reach the Customer Concerns Line toll free, dial the RITE line at 310-0000, and then dial 427-4903 and leave a message or stay on the line for an operator. The Customer Concerns Line is accessible by phone from Monday to Friday, 8 a.m. to 4:30 p.m., by fax at (780) 427-6970, or by e-mail at Utilities.Concerns@eub.ca.

SERVICE RECOGNITION

**Nancy Barnes**

Resources Applications
EUB staff member since 1981

# EUB Increases Oil Production in Wake of Hurricane Katrina

To help avert an energy crisis, the International Energy Agency (IEA) asked Canada to increase oil production as part of a global appeal to augment the amount of crude being shipped to the United States. Alberta Premier Ralph Klein acted quickly by asking that the province's energy sector be allowed to boost oil production and ship more south of the border.

**AS THE SOUTHERN UNITED STATES** reeled from one of the worst natural disasters ever to strike North America, Alberta pitched in.

In the late summer of 2005, Hurricane Katrina descended upon the Gulf of Mexico, shattering thousands of lives and devastating countless cities and towns. The powerful storm also dealt a serious blow to Gulf Coast oil production and refining capabilities, which threatened to cause massive fuel shortages throughout the United States.

To help avert an energy crisis, the International Energy Agency (IEA) asked Canada to increase oil production as part of a global appeal to augment the amount of crude being shipped to the United States. Alberta Premier Ralph Klein acted quickly by asking that the province's energy sector be allowed to boost oil production and ship more south of the border.

In response to Premier Klein's request and following consultations with Alberta Minister of Energy Greg Melchin, the EUB took immediate action, which resulted in an additional 2385 cubic metres ($m^3$) (15 000 barrels) of oil per day being pipelined to our American neighbours in their time of need.

The measure—approved on September 2, mere days after the hurricane hit—increased the supply of oil on a temporary basis by suspending the Maximum Rate Limitation (MRL) orders. An MRL order is the maximum rate of oil production prescribed by the EUB to ensure conservation of an oil reservoir.

Based on the EUB's 2004 *Alberta's Energy Reserves and Supply/Demand Outlook* report, Alberta's crude oil production sat at 42 780 $m^3$ (269 100 barrels) per day; the EUB believed the temporary suspension of MRL orders would have minimal long-term impacts on the province's oil reserves. Existing infrastructure in the United States and Alberta enabled the additional oil to be shipped and refined.

The EUB extended the temporary MRL suspension until December 31, 2005, and continued to monitor efforts to bring oil production back on line in the Gulf of Mexico.

# Capturing Attention at Home and Around the World

According to Alberta Economic Development, companies and organizations from such nations as the Netherlands, the United States, China, Israel, France, Japan, and the United Kingdom have confirmed or already made investments in Alberta's oil sands industry.

**THE ALBERTA OIL SANDS** received unprecedented attention in 2005 as countries around the world looked more seriously than ever at our province's bitumen as a marketable and secure energy source.

In 2005, the EUB reported established reserves in the Alberta oil sands of 174 billion barrels.

The EUB received three applications for major mineable oil sands projects in the Fort McMurray area and expects more to come in 2006. In situ applications, including facilities in the Athabasca, Cold Lake, and Peace River regions, reached 84.

According to Alberta Economic Development, companies and organizations from such nations as the Netherlands, the United States, China, Israel, France, Japan, and the United Kingdom have confirmed or already made investments in Alberta's oil sands industry. Alberta Economic Development has also fielded additional interest in the oil sands from India, Germany, Austria, Italy, and South Korea.

The global interest in Alberta's oil sands has resulted in ever-growing media coverage. The oil sands and Fort McMurray are regular features in national newspapers—*The Globe and Mail* and the *National Post*—and numerous American and global media outlets have visited the region. Stories on the oil sands have been featured in *The New York Times*, on *60 Minutes*, BBC, and CNN, and in *Maclean's* and *Forbes* magazines.

SERVICE RECOGNITION

**Marilyn Craig**

Public Safety/Field Surveillance
EUB staff member since 1975

# Restoring Equilibrium to the Environment

**ALBERTA'S OIL AND GAS INDUSTRY** is known worldwide for carrying out its business in a professional and responsible fashion. However, occasionally companies fail financially or simply disappear, leaving Alberta taxpayers on the hook for "orphaned" wells, batteries, and other installations that can require costly cleanups and reclamations.

The EUB has adopted a series of strict measures to guard against this risk, the most recent being the Large Facility Liability Management Program (LFP), introduced in 2005.

The LFP complements the existing Licensee Liability Rating (LLR) Program, which protects Albertans from the costs to suspend, abandon, remediate, and reclaim any orphaned upstream oil and gas facility.

The LFP carries this protection a step further to include facilities such as sulphur recovery gas plants, standalone straddle plants, and in situ oil sands processing plants with an approved design capacity of about 4930 cubic metres (31 000 barrels) per day. There are 91 facilities and sites that fall under the LFP.

As with the LLR Program, the LFP assesses the liability of a licensee to address its suspension, abandonment, remediation, and reclamation liabilities based on a comparison of its deemed assets to its deemed liabilities. A company's deemed liability is the estimated cost to suspend, abandon, remediate, and reclaim a large facility for which it holds the licence. This value is based on site-specific assessments.

In 2005, the EUB issued three closure orders related to LLR noncompliance, down from twelve in 2004. No LFP closure orders were issued in 2005.

The success of the EUB's LFP and LLR programs can be attributed to the cooperative efforts of the petroleum industry, stakeholder groups, and the EUB.

The programs are part of a range of solutions, including the Orphan Well Association, a nonprofit group that operates under the delegated authority of the EUB, to protect taxpayers from liabilities related to oil and gas facilities.

"The EUB is making sure that industry, not taxpayers, will pay any costs to clean up facilities now and in the future," says Mark Kavanagh, Liability Management Advisor for the EUB.

"The EUB is making sure that industry, not taxpayers, will pay any costs to clean up facilities now and in the future."

*Mark Kavanagh,*
*Liability Management Advisor*
*EUB*

*Alberta Geological Survey*

# Tracking Underground Geohazards

PREDICTING WHERE, when, and how Mother Earth will unleash her fury is no easy feat. The Alberta Geological Survey (AGS), however, is striving to meet the challenge.

In 2005, the AGS introduced the Geohazard Program to decode Alberta's geology and identify, quantify, manage, and mitigate naturally occurring geological hazards.

The Geohazard Program got its start in April 2005 when the AGS took over responsibility for the long-term monitoring of Turtle Mountain in the Crowsnest Pass, the site of the world-famous 1903 Frank Slide in which more than 70 people were killed. Two other projects were subsequently added: the Peace River Landslide Project, which examines geological dangers in urban settings, and the Canadian InSAR (interferometric synthetic aperture radar) Project, the application of satellite technology in the study of geohazards.

The AGS hopes to become a hub for geohazards information and outreach materials for provincial and municipal government agencies and the public alike. Its other goals include developing geohazards risk-reduction strategies, with an emphasis on the energy sector; supporting and participating in geohazards research in Alberta; engaging in the development and application of remote sensing methods; and operating, maintaining, and upgrading the monitoring system on Turtle Mountain.

The Turtle Mountain Field Laboratory provides early warning of another catastrophic rock avalanche. This laboratory will also facilitate world-class research on the mechanics of slowly moving rock masses, develop advances in instrumentation, and apply new techniques to characterize the surface and subsurface geology of the mountain.

The Geohazards Program also monitors geological dangers in urban areas, a goal that spawned the Peace River Landslide Project. The AGS chose the Town of Peace River as the pilot study area because of a history of landslides in the region. A three-year study has been developed to characterize the extent, rate, and [illegible] tors for landslides in the area.

The Canadian InSAR Project identifies landslide hazards through satellite technology by defining areas of ground movement. The AGS is testing the technology on strategic sites in Alberta—Turtle Mountain, the Town of Peace River, and the Little Smoky Landslide near Valleyview—as part of a larger national initiative being led by the Canadian Centre for Remote Sensing, with funding support by the Canadian Space Agency. ✦

The AGS hopes to become a hub for geohazards information and outreach materials for provincial and municipal government agencies and the public alike.

**Jim Meckelborg**

Resources Branch
EUB staff member since 2001

*Bitumen Conservation*

# Over 25 Billion Barrels of Valuable Energy Reserves Protected

**THE EUB IS ENTRUSTED** with safeguarding the potential of Alberta's valuable energy reserves, which means it must sometimes balance shutting in one resource to protect the economic viability of another.

*Decision 2005-122* proved to be one of those times. Issued by the Board in November 2005, *Decision 2005-122* ruled that natural gas production from the Wabiskaw-McMurray deposit in northeast Alberta threatened bitumen recovery in the key Athabasca Oil Sands Area.

The EUB determined that as this gas was produced, it posed a risk to bitumen recovery schemes that rely on thermal techniques, such as steam-assisted gravity drainage, by lowering much-needed formation pressure that helps drive the bitumen production.

The Board had previously estimated that about 1.27 billion cubic metres ($m^3$) (45 billion cubic feet), or 0.9 per cent, of Alberta's annual natural gas production was shut in following the 2004 interim hearings. This represents 7.9 billion $m^3$ (280 billion cubic feet), or 0.7 per cent, of Alberta's remaining gas reserves.

*Decision 2005-122* determined that production from certain Wabiskaw-McMurray gas zones in 917 wells must be shut in. The final decision did not represent a significant change from the gas estimated to be affected by the 2004 interim decisions.

The EUB estimates the decision protects about 4.05 billion $m^3$ (25.5 billion barrels) of potentially recoverable Wabiskaw-McMurray bitumen, roughly 64 years' worth of production—which amounts to 14.6 per cent of Alberta's remaining bitumen reserves.

Furthermore, the EUB estimates that the energy content from the conserved bitumen is 500 times greater than that of the shut-in gas production. The decision reflects the EUB's mandate to ensure that Alberta's energy resources are conserved.

# Protecting Alberta's Critical Energy Infrastructure from the Threat of Terrorism

THE TERRIBLE EVENTS OF 9/11 shocked and horrified North Americans and exposed a vulnerability we hadn't previously considered. The repercussions of that tragic day have been enormous. Some of these are tangible, like increased security measures at airports. Others are less obvious, such as the homeland security policies implemented by the Canadian and American governments.

As in most jurisdictions across the continent, Alberta immediately responded by identifying possible terrorist targets within the province and initiating measures to protect them. The province was also faced with the reality that Alberta is now recognized internationally as a major oil supplier, primarily due to the oil sands.

The international interest that has opened up markets for Alberta crude also carries with it the threat of unwanted attention from terrorists seeking to destabilize the world in any way possible.

When potential targets include energy and power facilities that number in the hundreds of thousands, protective measures must be clearly conceived and very efficient.

With the support of the EUB and other agencies, a committee of representatives from the province's Solicitor General and Alberta Municipal Affairs has developed Alberta's Counter Terrorism Crisis Management Plan.

The EUB regulates all energy and power facilities within Alberta except those that cross provincial or national borders. They are regulated by the National Energy Board. To ensure that public safety is protected, the two regulators have worked collaboratively to establish strong and clear guidelines for cooperation, information sharing, and coordination of activities.

In addition, the EUB has worked with local police to develop an effective and tightly managed response protocol for police and provincial and national agencies.

The plan outlines threat-mitigation strategies, identifies critical infrastructure, establishes five threat levels, and implements certain requirements from operators of any critical infrastructure.

There are many different types of facilities, including oil sands mines, electrical generation, gas or oil sands processing, transmission lines, pipelines, petrochemical plants, and refineries, that can be designated as critical infrastructure.

Facilities with this designation must develop a critical infrastructure plan. The EUB initially inspects all of these facilities, and once compliance is achieved, it issues a yearly certificate. Plans may be audited by the EUB at any time if deemed necessary.

The five threat levels are

1) no threat
2) low threat
3) medium threat
4) high threat
5) imminent threat

Most critical infrastructure sites conduct everyday operations at level 2 or 3.

Threat notification to the EUB comes from the Security and Information Management Unit (SIMU) of the Solicitor General or Emergency Management Alberta, and specific information about a threat comes from the SIMU, the Canadian Security Intelligence Service (CSIS), or the RCMP. These intelligence networks, to which the EUB is closely linked, are vital to preserve the integrity of EUB and industry protocols and plans.

The international interest that has opened up markets for Alberta crude also carries with it the threat of unwanted attention from terrorists seeking to destabilize the world in any way possible. When potential targets include energy and power facilities that number in the hundreds of thousands, protective measures must be clearly conceived and very efficient.

The EUB confirms the threat level with the facility operator and reviews the plan of action. Based on the level, the operator then implements its threat mitigation plan.

If the response is not appropriate, the EUB has the discretion to order an operator to implement security measures or take any action deemed necessary to implement threat mitigation strategies. If the threat is considered high or imminent, the EUB may order the facility to shut down, implement threat mitigation strategies, and recover any costs associated with that action from the operator.

To ensure that local police and emergency responders have the built-in capability to respond appropriately in cases of an elevated threat, operators are required to consult with local authorities, such as the RCMP, municipal police forces, emergency medical services, and fire departments.

The EUB understands that no plan can anticipate and prepare for every situation. But through cooperation and collaboration, Alberta has developed an effective crisis response plan that will ensure public safety to the highest degree possible during any terrorist threat.

SERVICE RECOGNITION

**MaryAnne Pinto**

Resources Branch
EUB staff member since 1981

# Open for Business

**ON SEPTEMBER 26, 2005**, the EUB opened its Customer Contact Centre (CCC) to provide easy access to the EUB for both public and industry inquiries and ensure prompt, professional, and knowledgeable service.

The CCC team works in conjunction with all branches of the EUB to provide excellent customer service. The CCC attempts to address as many calls as possible and forwards those it cannot directly respond to, such as complex technical questions or policy issues, to an appropriate EUB staff member.

The CCC also features an automated call distribution system, which monitors the volume of calls and response rate, as well as a hold queue if all agents are busy and a follow-up process to ensure that calls are answered or returned.

To reach the CCC from the main EUB number (403) 297-8311, press "0". If you know the contact person or help line you need, you are encouraged to continue to contact them directly. If you are not getting a response or do not know whom to contact, the CCC will make every effort to assist you.

### Field Centres

The EUB Public Safety/Field Surveillance Branch continues to provide 24-hour phone service to respond to complaints, incidents, and day-to-day operational issues related to oil and gas production. For contact information, go to www.eub.ca and click on Contact Us.

### Utilities

The Utilities Branch office in Edmonton receives all inquiries and concerns related to utility rates and delivery of utility services to consumers. The Utilities telephone numbers are (780) 427-4901 for inquiries and (780) 427-4903 for concerns.

### Information Services

At the EUB head office in Calgary, Information Services processes all purchases of data, documents, and maps. To contact them by telephone, dial (403) 297-8311 and press "2". Walk-in service is also available.

### Library and Record Services

The EUB Library, located at the EUB head office in Calgary, can assist in researching historical or current information that may not be readily available elsewhere. Both walk-in and telephone service are available. Call (403) 297-8242.

#### External Customers

For telephone access, dial (403) 297-8311. External customers then have the option of choosing

"0" for general inquiries and to reach the CCC,

"1" for the Facilities Applications Group help line (callers have additional choices within the Applications help line menu),

"2" for Information Services,

"3" for Production/Well Data Services,

"4" for Utility Complaints (Edmonton)

or spelling the name of the person they wish to speak with.

# Communication and Regulatory Enhancement

**COALBED METHANE (CBM)**, an unconventional gas source, continues to emerge as a topic of interest among Albertans and industry. In 2005, EUB staff worked diligently with Albertans, industry, and government agencies to ensure that CBM information was accurate and that a strict regulatory framework continued to be in place for the development of CBM.

### EUB Initiatives

Even with strict regulation governing the development of CBM in Alberta, there is an ongoing need to review existing regulations to ensure that evolving needs are met. In 2003, an extensive public consultation program— the Multi-Stakeholder Advisory Committee—was initiated by the Alberta Government's Department of Energy. Committee participants included Albertans from environmental, landowner, and agricultural organizations, local governments, the energy industry, and provincial government departments and agencies. Involved in the consultations were the EUB, Alberta Agriculture, Food and Rural Development, Alberta Environment, and Alberta Sustainable Resource Development.

The public consultations provided information about CBM in a coordinated fashion and solicited feedback from Albertans on existing regulations and potential future directions.

A final report issued in 2005 made 44 recommendations on water, surface, and air impacts, royalties, tenure, industry best practices, and non-specific CBM issues and broad energy topics. The EUB is now working collaboratively with stakeholders to implement recommendations that fall within the EUB's mandate.

In addition to its work with other government agencies and stakeholders, the EUB has taken measures to ensure a continued organized framework and regulations for CBM development in Alberta. With a long history of oil and gas regulation, the EUB was able to forecast the trend toward CBM development and began implementing enhanced regulation related to shallow fracturing and baseline water well testing, well spacing initiatives in certain parts of the province, and upgraded computer and software systems to ensure that CBM production continues to be closely monitored.

**Al Nikiforuk**

Public Safety/Field Surveillance
Became an EUB staff member in 1991

Even with these proactive activities, there was a need to ensure that development and production of this emerging resource meet EUB guidelines. EUB Field Surveillance staff continue to make a concerted effort to ensure that CBM wells and associated facilities are in compliance with regulatory requirements.

### Communication

The EUB is committed to ensuring that Albertans are the recipients of accurate, fact-based information for all energy development.

Increased public awareness and a widespread requirement for accurate information about CBM has resulted in EUB staff attendance or presentation at public meetings, including town council meetings, conferences, and industry forums.

EUB Chairman Neil McCrank was the keynote speaker during Stakeholder Day at the Canadian Society for Unconventional Gas (CSUG) Conference in Calgary, and EUB technical experts were on hand throughout the conference to present regulatory challenges and changes related to CBM development.

EUB Field Surveillance and Communications staff also worked extensively to provide balanced information, clarify existing information and, in some instances, correct information about CBM to Albertans.

As the interest in CBM grows in Alberta, the EUB will continue to employ a combination of communications, data, personnel, and regulatory requirements for industry to ensure that this emerging resource continues to be developed in a responsible manner.

The EUB was able to forecast the trend toward CBM development and began implementing enhanced regulation related to shallow fracturing and baseline water well testing, well spacing initiatives in certain parts of the province, and upgraded computer and software systems to ensure that CBM production continues to be closely monitored.

SERVICE RECOGNITION

**Emily Gee**

Information and Systems Services
EUB staff member since 1966

# Bringing People Together

**AFTER PROVING ITSELF** in a three-year pilot project, the EUB Appropriate Dispute Resolution (ADR) process has become an integral part of the way we do business.

In the vast majority of cases, industry and landowners are able to successfully negotiate concerns about proposed energy development before an application is filed. Fewer than 3 per cent of the energy-related applications the EUB received in 2005 had outstanding objections. Some of the parties that held objections chose to engage in ADR, and of the 154 EUB staff facilitations and 17 third-party mediations that were completed, 82 per cent were resolved.

One of the main reasons for the ADR program's success and high resolution rate is that ADR allows people to be involved in decisions as they are made and to have more control over outcomes. Of the 145 completed feedback forms received in 2005, 95 per cent of respondents indicated that they would participate in ADR again and 94 per cent were satisfied or very satisfied with the process.

## Advantages of ADR

Many people choose ADR because it is easy to use and can lead to significant savings of cost and time. Last year, of the 54 EUB hearings scheduled, 34 were cancelled, of which 27 had ADR involvement.

Many people also choose to participate in ADR because the environment in which discussions occur is conducive to generating long-standing relationships built on trust. ADR enables the parties to address a wide variety of matters, even those outside of the EUB's jurisdiction, and although EUB employees cannot comment on such issues, they can facilitate a discussion that lets participants develop more complete agreements.

## Improving the Program

Part of the success of the ADR program is due to the work of the ADR Stakeholder Committee, which is committed to continual improvement. The committee continues to work with the Farmers Advocate Office and Synergy Alberta to develop a roster of landowner advisors available to support landowners in need of objective advice, technical or otherwise. The Farmers Advocate Office has agreed to take over the coordination of this effort with the help of other stakeholders, such as the Land Agents Advisory Committee, Synergy Alberta, and the ADR Stakeholder Committee.

The Stakeholder Committee is also working with landowners and industry to improve the wording of lease agreements that will benefit all parties involved to create more complete agreements and help to protect the interests of all parties.

### ADR: Finding Solutions

- 82 per cent resolution rate
- 27 hearings cancelled due to ADR
- 95 per cent would participate in ADR again
- 91 per cent left with improved understanding
- 94 per cent satisfied or very satisfied with the process
- 94 per cent would recommend ADR to others

### 2005 Overall ADR Results

- of 154 staff facilitations, 126 were resolved
- of 17 third-party professional mediations, 15 were resolved
- 82 per cent in total were resolved

### Third-party Professional Assistance

- 24 preliminary meetings were held: 17 carried on to mediation.
- 3 cases were dropped, as parties elected to negotiate without assistance.
- 4 cases were ongoing into 2006.
- 3 of the 24 cases deciding to use a process other than mediation shows the importance of the Preliminary ADR (PADR) meeting, where parties are able to discuss all options and decide on the best process for their issues.

### Company-to-Company (C2C) Cases

- 6 out of 6 C2C cases led to mediation, and all were resolved.
- Of the 24 hearings that took place, only 4 engaged in ADR prior to the hearing.

For 2006, the committee will focus on a review of its service provider and mediator rosters to ensure that they are still meeting the needs of stakeholders and are providing needed expertise.

### Facilitation Team Activities

The Facilitation Team, in place since September 2004, plays an important role in presenting information on ADR across the province. Over the past year, the team has made presentations to surface rights groups, synergy groups, industry associations, oil and gas conferences, and law conferences.

EUB ADR staff have also been involved in developing the ADR component of the JP-05 Task Force's recommended practices regarding energy industry disagreements concerning processing fees.

A new addition to the EUB's EnerFAQs series has also been written by the Facilitation Team to assist participants. This document covers some general questions about ADR and helps participants before they engage in the process.

Finally, the Facilitation Team continues to host monthly ADR practice sessions that are open to everyone, including members of the public and industry. These sessions are a fun and informal way to practice ADR skills. Interested parties can contact the ADR Coordinator to find out more about the practice sessions.

As always, the ADR Stakeholder Committee continues to look for ways to improve the program and invites feedback on this report. Please forward questions and comments about this report or the ADR program to the ADR Coordinator at (403) 297-3700.

One of the main reasons for the ADR program's success and high resolution rate is that ADR allows people to be involved in decisions as they are made. It gives people more control over outcomes.

SERVICE RECOGNITION

**Maria Pohl**

Public Safety/Field Surveillance
EUB staff member since 2001

# Connecting with Albertans

We believe that by reaching out directly to over 550 000 rural Albertans each week, we can deliver the information they need when they need it and in a local context specific to their needs.

**THE EUB IS COMMITTED TO** connecting with Albertans. Our communications philosophy is grounded in openness and transparency, and as Alberta's energy regulator, we are obliged to ensure that people understand their rights, responsibilities, and roles in participating in energy development.

In 2005, we continued to find new and creative ways to reach out to Albertans. Over the past year, we organized open houses, attended public meetings, and worked closely with local and regional media outlets.

We work with community associations, synergy groups, media outlets, and other organizations with an interest in energy development. We also meet with individuals, facilitate discussions between energy companies and landowners, and communicate through radio, television, and newspapers. Whether through face-to-face meetings or through media, we make every effort to raise awareness and increase understanding of the EUB and the energy industry in Alberta.

### Public Meetings and Open Houses

EUB general information sessions and regular requests for presentations from numerous groups and organizations enabled the EUB to communicate directly with Albertans during 2005 on a variety of topics, including coalbed methane, land use, and energy applications.

### Rural Advertising Program

One of the biggest challenges we face is communicating with a rural population living across the vast Alberta geography. Rural Albertans are active participants in energy development and, as such, they need to know that EUB Field Centres are available as a resource in their area and to understand the EUB's overall approachability when they have a concern about energy development. In late 2003, the EUB began an advertising campaign that targets 105 weekly rural newspapers across the province.

We believe that by reaching out directly to over 550 000 rural Albertans each week, we can deliver the information they need when they need it and in a local context specific to their needs.

Each of the ads provides topic-specific information and EUB Field Centre contact information. We hope the campaign will encourage rural Albertans to contact local EUB Field Centres or the Utilities Customer Concerns Line when they have questions or concerns about energy development in their area.

# Public Safety and Sour Gas

*2005 Update*

# Provincial Advisory Committee—What's Been Done

**IN JANUARY 2000**, the EUB struck the Provincial Advisory Committee on Public Safety and Sour Gas. Its mandate was to review and assess public health and safety–related requirements being applied to the discovery, development, operations, and delivery of Alberta's significant sour gas resources.

Sour gas is natural gas that contains measurable amounts of hydrogen sulphide ($H_2S$), a toxic substance that can be poisonous to humans and animals. Alberta is the third-largest natural gas producer in the world, and about 30 per cent of this production is considered "sour."

In the late 1990s, there was significant public concern about sour gas development, which led to the creation of the multistakeholder Provincial Advisory Committee.

Following a year's effort and after speaking with thousands of Albertans, the committee presented the EUB with 87 detailed recommendations, all directed towards

- providing a better understanding of sour gas,
- improving the sour gas regulatory system,
- reducing the impacts of sour gas on public health and safety, and, perhaps most important,
- improving the communications and consultation that take place with the public on all sour gas matters.

The EUB immediately accepted the report and pledged publicly to address all 87 recommendations. A team of senior EUB staff was put in place to begin working on this large and complex Public Safety and Sour Gas (PSSG) initiative.

Over the past years, there have been significant accomplishments in addressing the 87 recommendations. By the end of 2005, the EUB had completed work on 70 recommendations and work was under way on the remaining 17. PSSG involves significant regulatory re-engineering across numerous technical, scientific, health, operations, communications, and regulatory areas, broken down into five broad categories:

- Health Effects and Sour Gas Research
- Sour Gas Development, Planning, and Approval
- Sour Gas Operations
- Emergency Preparedness
- Information, Communication, and Consultation

Over the past years, there have been significant accomplishments in addressing the 87 recommendations of the Provincial Advisory Committee on Public Safety and Sour Gas. By the end of 2005, the EUB had completed work on 70 recommendations and work was under way on the remaining 17.

This review focuses on those five areas, with a brief overview of what the situation was when the initiative began in 2000 and touching on several highlights of what has been done to enhance public safety and confidence and bring stability to the development of Alberta's sour gas resources.

### Health Effects and Sour Gas Research—7 Recommendations

#### Situation in 2000

Needs were identified to strengthen environmental health services by providing more consistent information to regional health authorities, allowing for more effective responses to environmental health concerns raised by individual Albertans.

#### What's Been Done

- To provide the public with information on human and animal health studies, Alberta Health and Wellness compiled an extensive report on top-quality health studies that examined short-term impacts of $H_2S$ exposures. The report contained an easy-to-understand summary. A similar study on sulphur dioxide ($SO_2$) will be public in 2006. Both reports can be accessed on the Alberta Health and Wellness Web site at www.health.gov.ab.ca.
- New criteria for $H_2S$ public evacuation levels have been established and will be incorporated into the EUB's Emergency Preparedness and Response Requirements, which will be available for stakeholder review in late 2006.
- A new set of Clinical Practice Guidelines that provide a standard response for doctors to use in treating $H_2S$ exposures has been developed by a medical doctor in conjunction with Alberta Health and Wellness, the Alberta Medical Association (AMA), and Alberta Human Resources and Employment. During 2005 these were being reviewed by the AMA.

### Sour Gas Development, Planning, and Approval—25 Recommendations

#### Situation in 2000

The committee heard that there was a lack of confidence in the regulatory system and a need to clarify roles and responsibilities. Efforts were also needed to ensure that the public and industry understand the various jurisdictions and that there is better planning and coordination between surface and subsurface development.

Concerns were raised regarding the application and decision-making processes of the EUB, including perceptions of bias in favour of industry and that public hearings were intimidating and decision reports difficult to follow.

#### What's Been Done:

- A series of "working papers" has clarified the roles and responsibilities of more than 20 different

SERVICE RECOGNITION

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Public Safety/Field Surveillance
EUB staff member since 1981


**Darren Antos**

Public Safety/Field Surveillance
EUB staff member since 2001

organizations, including First Nations and Métis settlements, involved in public safety and sour gas development.

- An EUB bulletin to industry on Sour Gas Planning and Proliferation Assessment was released in 2004. During a trial period in 2005, EUB staff actively tracked and supported increased public involvement in sour gas project planning and communications. The EUB promoted the concept at community meetings across Alberta and saw increased communication on oil and gas projects by industry throughout 2005.
- An index cross-referencing all sour gas–related regulatory requirements was completed in 2005 and is available on the EUB Web site at www.eub.ca. This includes easy-to-understand public information on EUB hearings.

### Sour Gas Operations—18 Recommendations

#### Situation in 2000

Rules and regulations for sour gas were so scattered that it was difficult to know what they were. The committee also noted concern that existing regulations were not adequate, for example, on older sour pipelines, or for converting sweet facilities to sour. The committee spoke of concerns about the EUB being slow to respond to complaints and the need for greater involvement by field staff in inspections and enforcement of regulations.

#### What's Been Done

- The EUB issued *Directive 013: Suspension Requirements for Wells*, in December 2004. It requires licensees of suspended wells to inspect, service, and pressure test the wellhead; inspect and service control systems and lease facilities; report reactivation of the well on the EUB's digital data submission (DDS) system; and retain records. For medium- and high-risk wells, the licensee must also pressure test casing and tubing.
- A comprehensive compliance assurance plan has been developed. The new strategy includes prevention, education, and information before noncompliance occurs, and should a noncompliance event occur, responsive, appropriate enforcement. *Directive 019: EUB Compliance Assurance—Enforcement* provides details of the revised EUB compliance and enforcement requirements.
- A multistakeholder committee, with the assistance of a consultant, reviewed the economic impact of setbacks. Case studies were selected and information gathered on each one. The report *A Review of the Implications of Sour Gas Setbacks on the Ability to Develop Property,* September 2005 was completed and is available on the Advisory Committee Web site at www.publicsafetyandsourgas.org under "Implementation Progress."

A Public Zone Web site that is easy to use, easy to understand, and yet linked to relevant detailed technical information was launched in June 2005. It contains information on What Is Sour Gas, The Business of Sour Gas, Audits and Inspections, Actions on Public Safety, and Emergency Response and Public Involvement.

### Emergency Preparedness— 12 Recommendations

#### Situation in 2000

The committee found that members of the public, health providers, municipal representatives, and members of the petroleum industry all expressed concerns about current emergency response plan (ERP) requirements and about the approach used to determine the size of an emergency planning zone (EPZ), among other issues. The committee saw a need for clearer, more prescriptive ERP requirements.

#### What's Been Done

- In 2005, an ERP assessment protocol was developed and implemented following pilot projects. This assessment tests that operators are duly capable of implementing their ERPs.
- Also during 2005, work continued on the EUBH2S Computer software, which is designed to calculate EPZs using state-of-the-art dispersion modelling techniques.
  - » The EUBH2S software will be the base requirement in EUB *Directive 071: Emergency Preparedness and Response Requirements for the Upstream Petroleum Industry* for calculating EPZs.
  - » The EUBH2S software will have the ability to calculate the $H_2S$ and $SO_2$ mandatory evacuation levels to be required under a revised *Directive 071* once completed.

### Information, Communication, and Consultation—25 Recommendations

#### Situation in 2000

Concerns were noted about lack of awareness and opportunity for education regarding sour gas and difficulty getting consistent, credible, understandable information.

#### What's Been Done

A Public Zone Web site that is easy to use, easy to understand, and yet linked to relevant detailed technical information was launched in June 2005. It contains information on What Is Sour Gas, The Business of Sour Gas, Audits and Inspections, Actions on Public Safety, and Emergency Response and Public Involvement. This Web site is available through the EUB Web site at www.eub.ca.

A public Customer Contact Centre is now in place at the EUB staffed by a dedicated team who directly answer inquiries from the public. They are backed up by a Customer Contact Centre computer system and a team of senior staff. The Call Centre number is (403) 297-8311.

The EUB intends to have addressed all 87 recommendations by the end of 2006, after which a final report will be released.

# Working Across Alberta

# AN UNPRECEDENTED 98.2 PER CENT COMPLIANCE RATE

In 2005, the EUB suspended a total of 91 facilities, including 33 drilling rigs, 30 pipelines, and 17 oil production facilities. In the previous year, the EUB suspended 118 facilities. Since 2000, 825 facilities have been suspended.

**INDUSTRY ACTIVITY LEVELS** continued to rise in 2005, breaking records for drilling and well servicing. Despite this, the EUB's *Provincial Surveillance and Compliance Summary* for 2005 revealed that industry's compliance with major EUB regulations reached a rate of 98.2 per cent in 2005, up from 98 per cent in 2004 and 97 per cent in 2003. This measure is considered to be the best indicator of industry's compliance with the EUB's rules and regulations.

### Record Activity Levels

In the last five years, nearly 84 000 wells have been drilled in Alberta. But even while operating at such a fast pace, the energy sector has managed to improve its compliance with EUB regulations.

Energy companies operate almost 206 000 nonabandoned wells, 18 449 oil batteries and associated satellites, 815 gas plants, 10 291 gas batteries and compressor stations, and a pipeline network of more than 350 000 kilometres (km). Each year the EUB inspects a portion of this vast energy infrastructure to make certain that projects are constructed properly and operated safely.

Operating out of nine EUB Field Centres throughout Alberta, field staff inspect construction, operation, and abandonment operations at oil, gas, and oil sands facilities—including pipelines, compressors, and processing plants. They respond to emergencies and public complaints on a 24-hour basis, enforcing requirements consistently.

EUB requirements ensure orderly and responsible energy development, while at the same time protecting public safety, minimizing environmental impacts, improving conservation, and guaranteeing equity.

When noncompliance is identified, the EUB triggers a process that has an established policy for EUB enforcement actions. Through 2005, enforcement actions have been determined by the severity of the noncompliance event and escalated for subsequent noncompliance or failure to comply with the EUB's corrective order, in accordance with *Informational Letter (IL) 99-4: EUB Enforcement Process, Generic Enforcement Ladder, and Field Surveillance Ladder.* (Effective January 1, 2006, *Directive 019: EUB Compliance Assurance—Enforcement* replaced *IL 99-4.*)

The energy industry's proactive efforts in meeting and exceeding EUB requirements have resulted in overall high compliance rates. In 2005, the EUB carried out about 6200 enforcement actions, of which a mere 6 were appealed to the EUB's Enforcement Advisor.

In the Facilities Applications Group, the number of initial audits grew to 1555 in 2005 from 1092 in 2004, a 42 per cent jump. Proactive compliance in the Facilities Technical category increased to 97 per cent in 2005 from 90 per cent in 2004. Proactive compliance in the Wells Technical category increased to 90 per cent in 2005 from 84 per cent in 2004.

### Inspections

The total number of initial inspections/investigations, including well site inspections, increased from 15 379 in 2004 to 16 872 in 2005. The oil and gas industry continued to maintain a high compliance record. Minor unsatisfactory inspections increased slightly to 20.8 per cent of all inspections in 2005 from 20.5 per cent in 2004, while major and serious unsatisfactory inspections decreased slightly to 1.8 per cent in 2005, compared to 2.0 per cent in 2004.

In 2006, EUB staff will continue to focus on pipeline corrosion, noncompliant licensees, air monitoring activities, reduction of odours, and improving communication with all Albertans.

### Enforcement

Companies that fail to meet requirements or follow EUB direction are subject to escalating enforcement consequences. Enforcement actions always include deadlines for fixing a problem and may be reinforced by penalties, such as temporary or long-term suspension of operations.

In 2005, the EUB suspended a total of 91 facilities, including 33 drilling rigs, 30 pipelines, and 17 oil production facilities. In the previous year, the EUB suspended 118 facilities. Since 2000, 825 facilities have been suspended.

### Drilling and Servicing

Increased activity creates challenges for both industry and the EUB to ensure that drilling and servicing operations are carried out safely while meeting the strictest standards.

Ten blowouts were recorded during the drilling of 20 545 wells in 2005. Nine of these were freshwater flows and the tenth involved a sweet gas well. There was no significant impact on the public and only minimal impact on the environment as a result of these events. In addition, 128 kicks were recorded during drilling operations in 2005, or roughly 6 kicks per 1000 wells drilled.

Six blowouts occurred during servicing operations in 2005, two on sour wells and four on sweet wells. Five of the six blowouts were attributed to equipment failure and one to operator error. One of the blowouts was caused by an explosion that resulted in one worker being killed and two workers injured.

In 2005, fourteen blowouts were registered in the "other" category, all of which occurred on sweet wells. Six resulted from third-party damage when equipment struck a well. The remaining eight blowouts were caused

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SERVICE RECOGNITION

**Rob Barber**

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by equipment failure. These blowouts were of short duration and had minimal impact on the public or the environment.

*Directive 036: Drilling Blowout Prevention Requirements and Procedures* was revised in 2005. The update was released in February 2006.

### Pipelines

The pipeline failure rate fell to 2.3 per 1000 km of pipeline in 2005 from 2.4 per 1000 km in 2004. The majority of failures occurred in smaller-diameter gathering lines, primarily the 60.3 millimetre (mm), 88.9 mm, and 114.3 mm systems.

Field staff conducted 446 pipeline construction and test inspections in 2005, of which 411 were satisfactory, 19 were minor unsatisfactory, 15 were major unsatisfactory, and one was serious unsatisfactory. All unsatisfactory inspection items were brought into compliance. This compares to 564 pipeline construction and test inspections in 2004, of which 536 were satisfactory, 18 minor unsatisfactory, 9 major unsatisfactory, and one serious unsatisfactory.

Although corrosion continued to be the main cause of pipeline failures in 2005, there were fewer internal corrosion failures (420) compared to historical data. Failures due to external corrosion remained relatively constant at 116 in 2005 compared to past years, with efforts to reduce failure incidents in older pipeline coating systems continuing to present challenges.

When a failure occurs, the licensee must confirm the integrity of the entire pipeline segment, perform an engineering assessment on the pipeline system that it operates in, and outline measures to prevent further occurrences. When the cause of the failure is not readily identifiable, the licensee must perform a failure analysis.

### Sulphur Recovery

Sulphur emissions have decreased 26 per cent since 2000, from 78 000 tonnes to 57 000 tonnes in 2005. Since 1974, operators of Alberta gas plants have reduced sulphur emissions by about 75 per cent.

Sulphur recovery efficiencies at gas plants recovering saleable sulphur are now at 98.9 per cent.

### Spills

The number of spills declined in 2005 to 1429 from 1443 the previous year. Of those 1429 spills:

- 62 (4.3 per cent) were priority 1—those that pose the most serious environmental and public impact
- 247 (17.3 per cent) were priority 2—those where a significant volume has been released or the impact on the environment is a concern
- 1120 (78.4 per cent) were priority 3—low-volume spills on site or short-duration releases of sweet gas

As in past years, equipment failure and pipeline corrosion were the leading causes of liquid spills in 2005.

Inspections were carried out on 689 spills, resulting in 583 satisfactory inspections, 58 minor unsatisfactory inspections, and 48 major unsatisfactory inspections. The EUB did not register any serious unsatisfactory inspections.

The spill volumes for hydrocarbon and produced water in 2005 were 4958.8 cubic metres ($m^3$) and 13 158.9 $m^3$ respectively. This represents a 42.1 per cent decrease in hydrocarbons spilled and a 13.7 per cent drop in produced water spilled compared to 2004.

The EUB strongly backs spill cooperatives and provides support to the Western Canadian Spill Service (WCSS) to enhance spill response preparedness throughout the province.

Together, the WCSS, Enform, industry, and the EUB work towards improving spill prevention programs. In 2006, the EUB will concentrate on proactive spill prevention measures at oil spill cooperative meetings and during training exercises.

### Air Monitoring

In 2005, there were 768 air monitoring inspections conducted, compared to 695 inspections carried out in 2004, revealing an improvement in industry's compliance record.

The EUB has two mobile ambient air monitoring units (AMUs) equipped with analyzers capable of reading and recording hydrogen sulphide and sulphur dioxide emissions. The AMUs are also capable of measuring and recording wind speed and wind direction.

### Waste Management

In 2005, field staff conducted 66 waste management inspections, compared to 104 carried out in 2004. Of the 66 inspections, 40 were categorized as satisfactory, 22 minor unsatisfactory, and 4 major unsatisfactory. There were no serious unsatisfactory inspections.

Off-lease odours and staining/spillage were the most common deficiencies identified, and all facilities were brought into compliance. The EUB will continue to focus on waste management inspections in 2006.

### Major Initiatives

The EUB has detailed emergency preparedness and response requirements in *Directive 071: Emergency Preparedness and Response Requirements for the Upstream Petroleum Industry*. As part of the inspection process, field staff determine if the licensee has an approved emergency response plan (ERP) on site, has gone over the plan with the potentially affected residents, and has assessed its capability to implement the ERP by conducting exercises.

A more detailed audit protocol for assessing a licensee's capability to implement its ERP will be introduced in 2006.

### Responding to Public Concerns

In 2005, there was a 9 per cent increase in public complaints compared to the previous year. Since some complaints highlighted more than one issue, the EUB identified 1049 issues associated with 924 complaints in 2005, compared to 965 issues associated with 850 complaints in 2004.

Field staff respond to all complaints related to upstream oil and gas activities, with the goal of ensuring prompt, effective, and lasting resolution to the problems identified.

Furthermore, the EUB conducts a random complaint call-back survey each month to ensure that appropriate complaint response procedures are being used and any questions or concerns are addressed. Results of the 2005 survey indicate that

- 89.7 per cent of the individuals surveyed said their concerns were satisfactorily resolved, compared to 70 per cent in 2004,
- 56 per cent of the individuals surveyed were satisfied with the licensee's response, compared to 53.5 per cent in 2004, and
- 96.3 per cent of the individuals surveyed were satisfied with the response from the EUB, compared to 92.7 per cent in 2004.

### Public Involvement

The EUB's Field Surveillance Branch participated in 34 open houses in 2005 to address concerns, answer questions, deal with issues, and improve the public's understanding of proposed developments. Open houses are one way to improve communication and relationships among industry, the public, and government.

Field staff also participate in synergy groups and strongly endorse this effective cooperative approach. Synergy groups are usually made up of public, industry, and government representatives who work collaboratively to improve communications and identify and address issues.

### Transition

When noncompliance is identified, the EUB uses a process that has an established policy for EUB enforcement actions. Effective January 1, 2006, *Directive 019: EUB Compliance Assurance—Enforcement* replaced *Informational Letter (IL) 99-4: EUB Enforcement Process, Generic Enforcement Ladder, and Field Surveillance Ladder*. It also superseded the enforcement ladders of all other EUB directives and guides.

However, as all of the enforcement for this report occurred prior to the effective date of *Directive 019, IL 99-4* was used as the basis for enforcement for most audit/inspection categories listed here.

Open houses are one way to improve communication and relationships among industry, the public, and government. The EUB's Field Surveillance Branch participated in 34 open houses in 2005 to address concerns, answer questions, deal with issues, and improve the public's understanding of proposed developments.

# Alberta Energy Resources and Utilities

# RESERVES, PRODUCTION, AND DELIVERIES

## BITUMEN

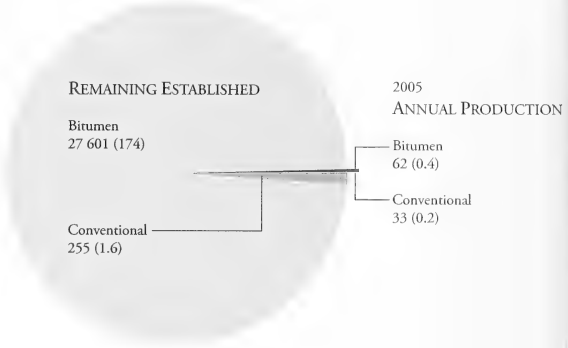
Alberta has the largest oil sands resource in the world. Current estimates indicate that about 28 billion cubic metres ($m^3$) (174 billion barrels [bbl]) of bitumen are recoverable with today's technology and economic conditions. Annual production of bitumen and conventional crude oil is just a sliver of the existing bitumen reserves. Alberta is at a relatively early stage in the likely long development history of the oil sands resource.

In 2005, a major geological review of the second largest oil sands deposit, the Cold Lake Clearwater, and the northern portion of the Cold Lake Wabaskaw-McMurray was undertaken. This review is part of the EUB's significant ongoing effort to update and refine information on the province's bitumen resource. For more details of this review, as well as a complete picture of all of Alberta's energy resources, see *ST98-2006: Alberta's Reserves 2005 and Supply/Demand Outlook 2006-2015.*

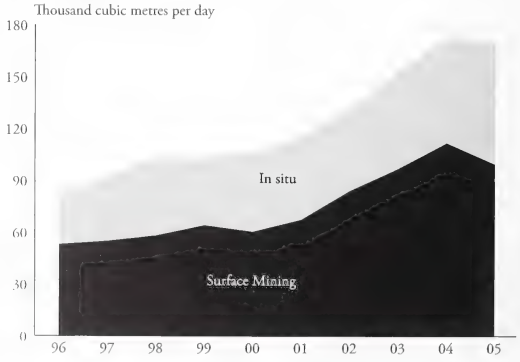
Bitumen production has more than doubled in the past 10 years. In 2005, the production of bitumen was about 169 thousand $m^3$ per day ($m^3$/d) (1060 thousand bbl/d). Surface mining accounted for about 59 per cent and in situ accounted for about 41 per cent of the total bitumen production. Due to a major fire at an upgrader, overall production of raw bitumen declined by some 2 per cent from 2004 volumes. From surface mineable bitumen, about 87 thousand $m^3$/d (550 thousand bbl/d) of synthetic crude oil was produced.

Alberta's Crude Bitumen Remaining Reserves and Production, Compared to Conventional Remaining Reserves and Production

Million cubic metres (billion barrels)

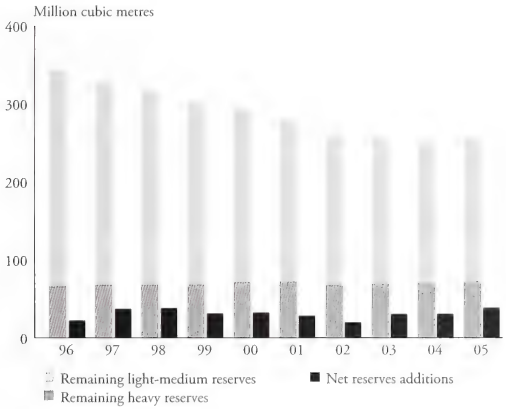



Alberta's Crude Bitumen Production

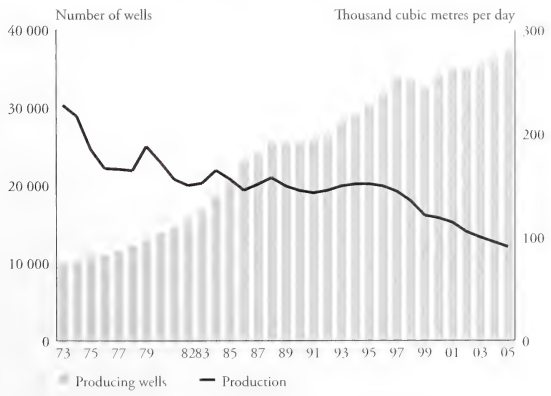


# CONVENTIONAL CRUDE OIL

Net Reserves Additions and Remaining Reserves of Conventional Crude Oil




Conventional Crude Oil Production and Producing Oil Wells




New drilling and improved recovery from waterflooding existing pools added 19.9 million $m^3$ (125 million bbl) of crude oil to Alberta's reserves in 2005, thereby replacing 60 per cent of 2005's production of 33.1 million $m^3$. Alberta's remaining established reserves of crude oil increased by 5.6 million $m^3$ to 255 million $m^3$ (1.6 billion bbl). These reserves are composed of 72 per cent light-medium and 28 per cent heavy crude.

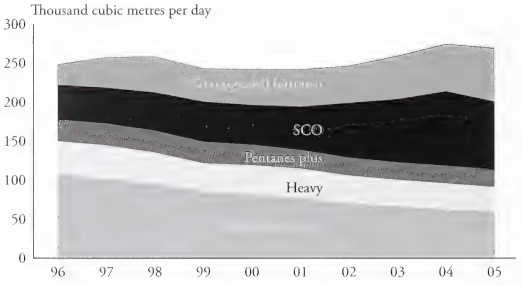
Alberta's production of conventional crude oil peaked in 1973 and has been in decline since. In 2005, total crude oil production declined to about 91 thousand $m^3/d$ (570 thousand bbl/d), a decline of 5 per cent.

As production of light-medium and heavy crude oil has decreased, nonupgraded bitumen and synthetic crude oil (SCO) production has increased. In 2005, total production of crude oil and equivalent decreased 2 per cent over 2004 levels.

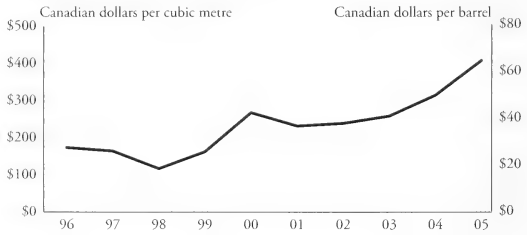
In 2005, the price of oil at the Alberta wellhead averaged $\$408.56/m^3$ in Canadian dollars ($64.92/bbl). This is a 30 per cent increase over the 2004 price of $\$315.17/m^3$ ($50.08/bbl). For 2005, the price reached a record high in August, at $\$475.30/m^3$ ($75.53/bbl), and was lowest in January, at $\$337.50/m^3$ ($53.63/bbl).

In 2005, 76 per cent of Alberta's crude oil, crude bitumen, synthetic crude oil, condensate, and pentanes plus was delivered to other provinces, the U.S.A., and offshore.

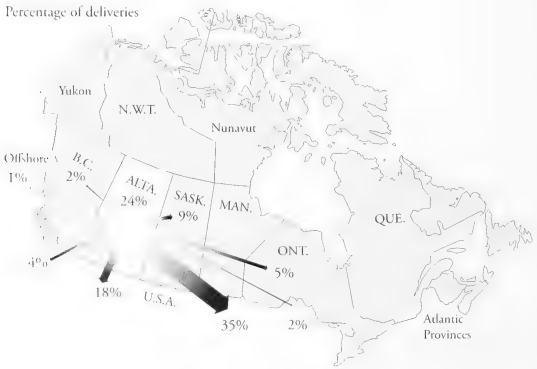
Alberta Supply of Crude Oil and Equivalent




Average Price of Oil at Alberta Wellhead

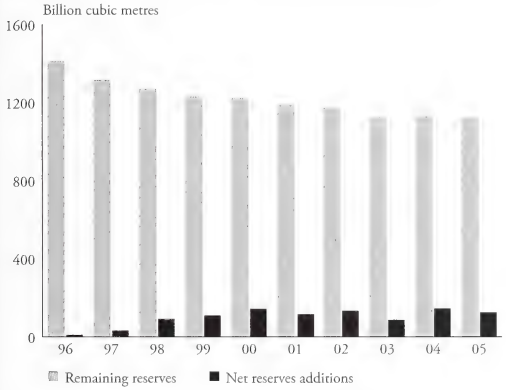



Deliveries of Crude Oil, Crude Bitumen, Synthetic Crude Oil, Condensate, and Pentanes Plus

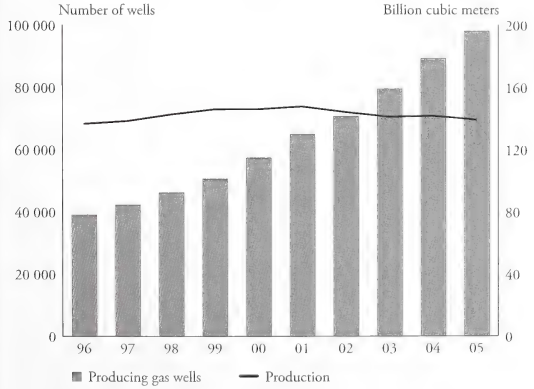


# NATURAL GAS, NATURAL GAS LIQUIDS, AND SULPHUR

Marketable Gas: Net Reserves Additions and Remaining Reserves




Marketable Gas Production and Producing Gas Wells




Some 126 billion $m^3$ (4.5 trillion cubic feet [cf]) of marketable gas were added to Alberta's recoverable reserves in 2005. Additions are a result of discovering new reserves and reassessing reserves already discovered. Production in 2005 outstripped additions, contributing to a 0.6 per cent decrease in the remaining established reserves of marketable gas to 1120 billion $m^3$ (40 trillion cf) as of year-end 2005.

The number of producing gas wells has increased significantly year over year, while gas production has stabilized after reaching its peak in 2001. It now takes an increasing number of new gas wells each year to offset production declines in existing wells. This is due in part to the large number of new wells in southeastern Alberta, where well productivity rates are low.

In 2005, a record number of gas wells were drilled, while marketable gas production remained essentially flat.

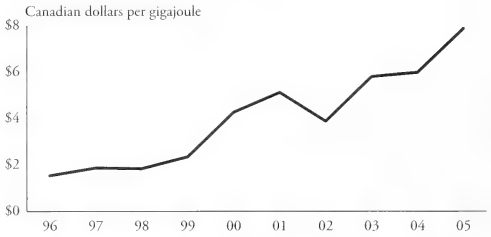
Included in marketable gas production is coalbed methane (CBM) production. Cumulative CBM production since 1977 is estimated to be about 2.1 billion $m^3$ to year-end 2005, with an estimated 1.3 billion $m^3$ or more of that having been produced in 2005.

In 2005, the average price of natural gas at the plant gate increased to $7.87/gigajoule (GJ) ($8.30/thousand cf) from $5.98/GJ ($6.31/thousand cf) in 2004. For 2005, the price was highest in October, at $11.38/GJ ($12.01/thousand cf), and lowest in February, at $5.94/GJ ($6.27/thousand cf). These high price levels are expected to continue over the longer term as gas supply and demand levels remain tight.

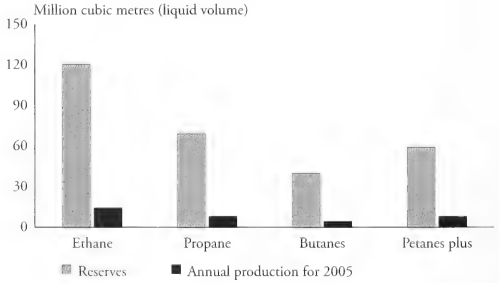
Production of natural gas liquids in 2005 was virtually unchanged from 2004. Overall, remaining natural gas liquids reserves declined by 0.2 per cent.

In 2005, 73 per cent of Alberta's gas was delivered to other provinces and the U.S.A.

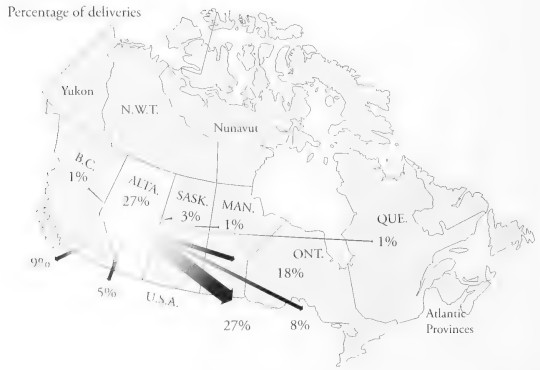
Average Price of Natural Gas at Plant Gate




Natural Gas Liquids: Remaining Reserves Expected to be Extracted and Annual Production for 2005




Deliveries of Gas



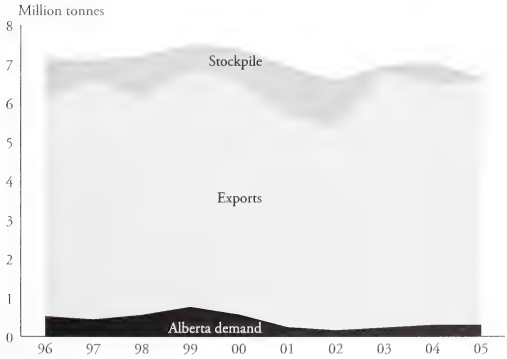
Deliveries of Sulphur


Preliminary estimates indicate that in 2005 demand for sulphur within Alberta was only about 0.3 million tonnes. It was used in production of phosphate fertilizer and kraft pulp and for other chemical operations.

Because elemental sulphur is fairly easy to store, imbalances between production and demand have traditionally been accommodated through adding to or removing from sulphur stockpiles.

Preliminary estimates indicate that in 2005 about 97 per cent of sulphur marketed by Alberta producers was shipped outside the province, primarily offshore.

Alberta Sulphur Production and Demand



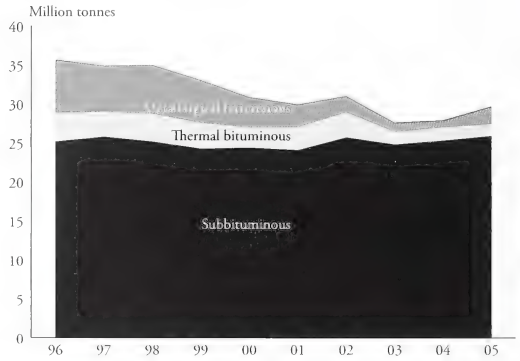
# COAL

The current estimate for remaining established reserves for all types of coal is about 34 billion tonnes. This massive resource continues to help meet the energy needs of Albertans, supplying fuel for about 65 per cent of the province's electricity generation. Alberta's coal reserves represent about 1000 years of supply at current production levels.

Alberta marketable coal production totalled slightly less than 30 million tonnes in 2005.

In 2005, 88 per cent of Alberta's coal production stayed in the province, while just over 12 per cent was delivered offshore. Very small quantities of thermal bituminous coal were delivered to other Canadian provinces and the U.S.A.

Alberta Marketable Coal Production

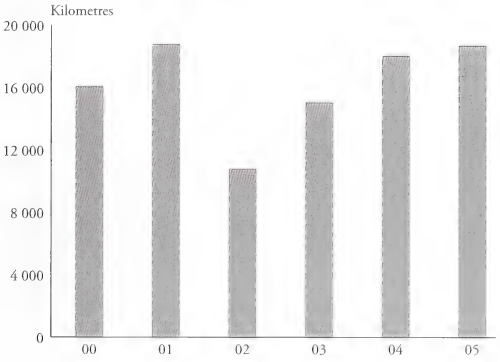



Deliveries of Coal


For more information on reserves, supply, and demand, including forecast information, see *ST98-2006: Alberta's Reserves 2005 and Supply/Demand Outlook 2006-2015*. For more information on resource deliveries, see *ST3: Alberta Energy Resource Industries Monthly Statistics*. Information regarding coal production and deliveries is in *ST26: Alberta Coal Industry Monthly Statistics*, and coal reserves information is in *ST31: Reserves of Coal*.

# PIPELINES

Approved Length of Pipeline Additions*




* The total lengths were calculated by adding all pipeline statuses (including operating, permitted, abandoned, discontinued, and suspended) for all types of pipelines. Pipelines crossing an Alberta border are regulated by the National Energy Board and are not included in these numbers.

In 2005, the EUB approved construction permits for 18 693 km of pipelines wholly within Alberta, compared to 18 029 km in 2004. These permits allowed for the total length of intra-Alberta pipelines to increase to 373 120 km, enough to circle the earth nine times.

For more information on Alberta's pipelines, see the pipeline section of *ST99-2006: EUB Provincial Surveillance and Compliance Summary 2005*.

# SOLUTION GAS FLARING AND VENTING

The EUB reports flared and vented volumes of gas for various upstream oil and gas industry sources, such as well tests, gas plants, gas gathering systems, transmission lines, and oil, bitumen, and gas batteries. In 2005, industry continued to make considerable progress in reducing flared and vented volumes from upstream oil and gas sources.

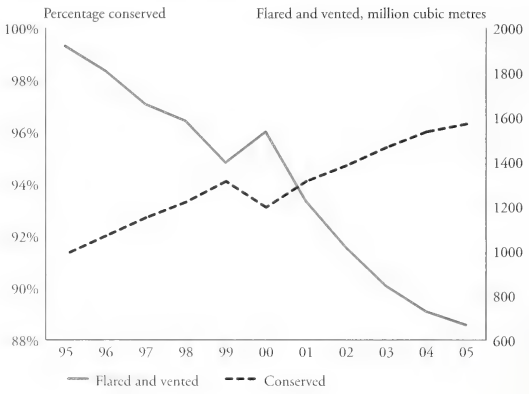
Solution gas is gas that is separated from oil and bitumen production. It is the largest source of flaring and venting in Alberta. The volume of solution gas produced in 2005 was 18 038 million $m^3$ (636 741 million cf), a decrease of 1.9 per cent from 2003. This decrease in production of solution gas can be attributed to lower gas-oil ratios in conventional oil production.

In 2005, volumes of solution gas flared and vented continued to decline, while solution gas conservation, or the recovery of solution gas for use as fuel, power generation, sale, and injection into an oil or gas pool, increased.

The volume of solution gas flared and vented declined from the 1996 volume of 1808 million $m^3$ (63 849 million cf) to 667 million $m^3$ (23 545 million cf) in 2005, a decrease of 63 per cent from 1996 and a decrease of 8.4 per cent from 2004.

A record 96.3 per cent solution gas conservation rate was achieved in 2005, compared to the previous record of 96.0 per cent in 2004.

Solution Gas Conserved, Flared, and Vented



## Solution Gas Flaring and Venting Reduction Schedule

| Year | Flaring Reduction |
|---|---|
| 2000 | 38% |
| 2001 | 53% |
| 2002 | 62% |
| 2003 | 70% |
| 2004 | 72% |
| 2005 | 72% |

## Solution Gas Flaring and Venting Volumes

| | Flaring | | Venting | |
|---|---|---|---|---|
| Year | million $m^3$ | million cf | million $m^3$ | million cf |
| 2000 | 831 | 29 346 | 704 | 24 862 |
| 2001 | 624 | 22 036 | 600 | 21 189 |
| 2002 | 514 | 18 152 | 502 | 17 728 |
| 2003 | 408 | 14 408 | 435 | 15 362 |
| 2004 | 372 | 13 137 | 356 | 12 572 |
| 2005 | 377 | 13 308 | 290 | 10 237 |

The flaring of solution gas has increased slightly from 2004 to 377 million $m^3$ (13 308 million cf) in 2005. This is a reduction of some 72 per cent from the 1996 flaring baseline 1340 million $m^3$ (47 322 million cf).

Significant gains were realized in 2005 in the overall reduction of vented solution gas. Vented gas volumes were reduced to 290 million $m^3$ (10 239 million cf) from 356 million $m^3$ (12 572 million cf) in 2004, a reduction of 66 million $m^3$ (2330 million cf), or 17 per cent. It is important to note that 57 per cent of the reduction was a result of lower vented volumes from bitumen operations. Notwithstanding the gains in 2005, the EUB continues to be concerned about the volume of solution gas being vented, and consequently work began in 2004 to update *Directive 060: Upstream Petroleum Industry Flaring Guide*. The revised version will include a number of measures to help achieve further reductions and is expected to be published in 2006.

For more information on upstream petroleum industry flaring and venting, see *ST60B-2006: Upstream Petroleum Industry Flaring and Venting Report*.

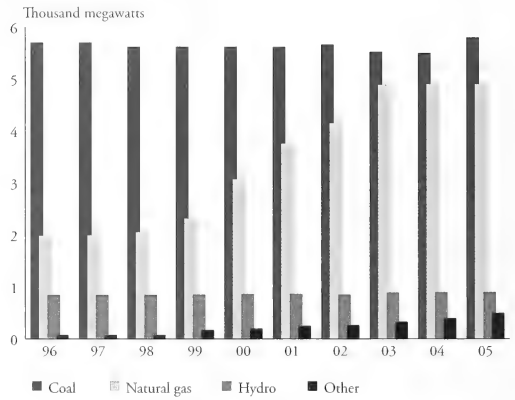
# ELECTRICITY

In 2005, Alberta's electric generating capacity increased to 12 100 megawatts (MW). In 2005, wind plants contributed 278.1 MW of capacity, an increase of 253.8 MW since 1999. For context, a one GW plant can produce enough electricity to power approximately one million typical homes.

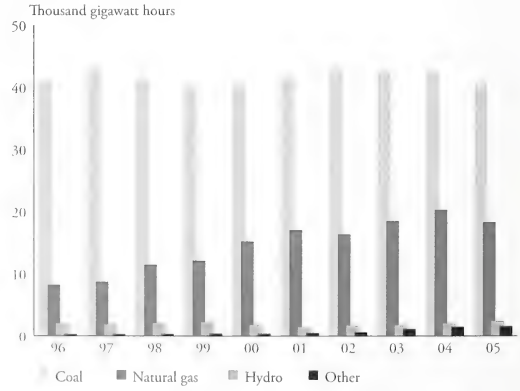
Alberta electric utilities generated 63 100 gigawatt hours (GWh) of electricity in 2005. For context, one GWh can power about 140 typical homes for a year. Coal-fired power plants generated 64 per cent of the province's electricity, while gas and hydro accounted for 29 and 4 per cent respectively. In 2005, wind plants contributed 814 GWh, an increase of 749 GWh since 1999.

Alberta's 2005 electric energy consumption increased by 2 per cent to just above 50 600 GWh. The residential sector showed an increase in demand of 2 per cent, the commercial sector experienced an increase of slightly more than 3 per cent, and the industrial sector showed an increase of slightly more than 2 per cent. The industrial demand does not include electricity generated and used on site.

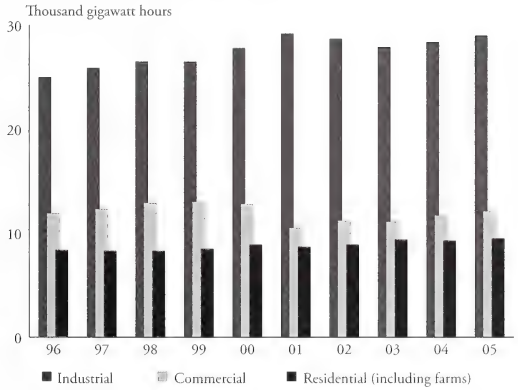
Electricity Generating Capacity



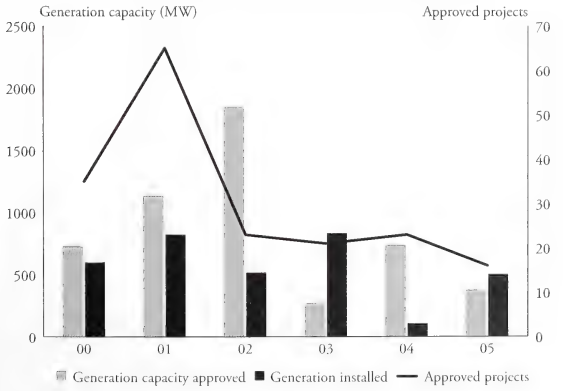

Electricity Generation



Alberta Electricity Consumption by Sector




Total Approved Electricity Generation Capacity and Number of Projects*




In 2005, the EUB approved 376.6 MW of electricity generation capacity, compared to 736.9 MW in 2004. The 2005 total is 67 per cent gas-fired generation capacity, 33 per cent wind-powered, and less than 1 per cent other generation (solar generation).

The graph to the bottom left reports "generation installed" for the year it was installed, not the actual year it was approved. Not all generation approved by the EUB is subsequently built, and when it is, it may take several years to complete a project.

In total, 502 MW of generation was added in Alberta in 2005.

The EUB's average processing time in 2005 for power plant applications was 27 working days for smaller, simple applications and 88 working days for larger, more complex projects.

* AES Calgary ULC had an application to construct and operate a 525 MW gas-fired power plant located about 1.6 km east of Calgary city limits. This project was approved in 2001. AES has notified the EUB that it no longer intends to proceed with the project.

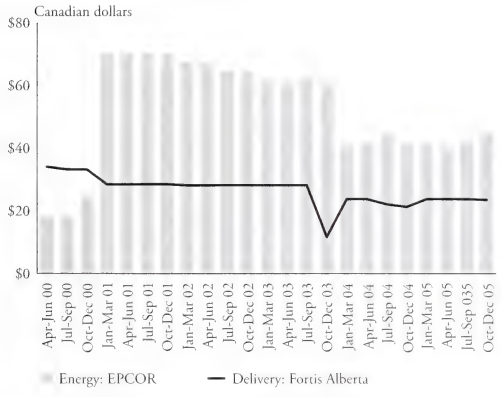
# Gas and Electric Utility Services

THERE ARE TWO MAIN components to utility rates: the charges for the energy commodity itself and the charges relating to the delivery of the energy to a customer's home. Different companies may provide each of these components. Delivery services are provided on a monopoly basis by a distribution company, and these charges are regulated by the EUB for all investor-owned utilities and certain municipal electric utilities. The retailer is billed by the distribution company for the customer's delivery charges and the retailer then bills the customer for the delivery charges and the commodity charges.

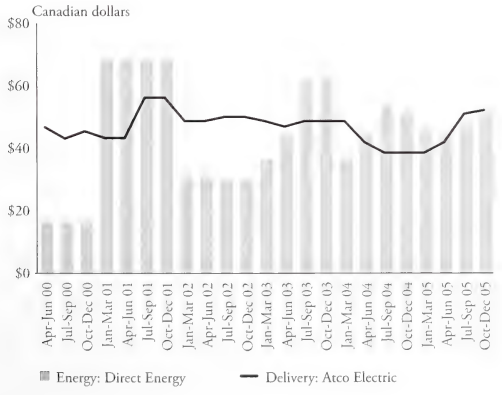
Energy charges are now determined in a competitive market. Eligible customers may choose to continue to receive their energy on a regulated rate basis, or they may choose to obtain their energy from a competitive retailer. For electric services, regulated retailer services are referred to as regulated rate tariff (RRT) service and for gas, regulated retailer services are referred to as default rate tariff service.

# ELECTRIC UTILITIES

EPCOR Energy Services (Alberta) Inc./
Fortis Alberta Inc. Energy and Delivery Costs




Direct Energy Regulated Services/
ATCO Electric Ltd. Energy and Delivery Costs




These electric utilities graphs show the delivery and energy costs of electricity.

Delivery rates recover the costs of transmission and distribution wires, local access fees, and other billing and administrative costs. These rates are set by the EUB through a public hearing process.

Municipally owned utilities may have charges in addition to the rates approved by the EUB. If so, these charges have been approved by the municipality and are listed as a separate line item on customers' bills.

While the EUB did not previously oversee the rates of municipally owned utilities, it now has jurisdiction over specified municipally owned electric utilities. Effective January 1, 2004, the EUB began to exercise the same jurisdiction over EPCOR's services in the City of Edmonton and ENMAX's services in the City of Calgary, as it does for investor-owned utilities.

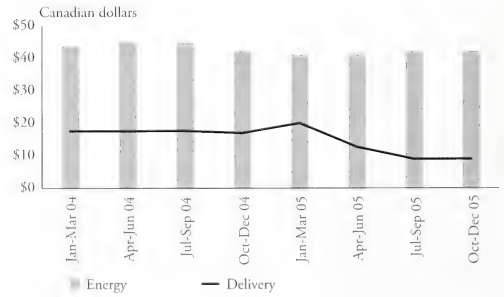
Delivery and RRT services are separate functions and are required to be provided by different companies, although the different companies can both be owned by the same parent company. This is the case for EPCOR services in the City of Edmonton and ENMAX services in the City of Calgary. Fortis customers receive RRT service from EPCOR and ATCO Electric's customers receive RRT service from Direct Energy Regulated Services (DERS).

In 2005 the cost of electricity for customers receiving RRT service from EPCOR, ENMAX, and DERS was based on the price of hedged products, which limit exposure to price fluctuations from the market-based prices set through the power pool. All of the utilities negotiated with customer groups to determine their procurement strategy.

EPCOR Energy Services Energy and Delivery Costs in the City of Edmonton*


* This chart only includes the charges the EUB has approved in accordance with its jurisdiction. Additional charges may be approved by the City of Edmonton. The local access fee has been approved by the City and is not included in this chart.

ENMAX Power Corporation Energy and Delivery Costs in the City of Calgary*




* This chart only includes the charges the EUB has approved in accordance with its jurisdiction. Additional charges may be approved by the City of Calgary. The local access fee has been approved by the City and is not included in this chart.

# GAS UTILITIES

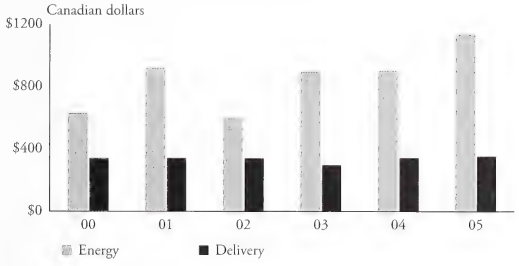
These gas utilities graphs show the energy and delivery costs of natural gas.

The delivery rates are designed to recover the costs of distributing natural gas to consumers.

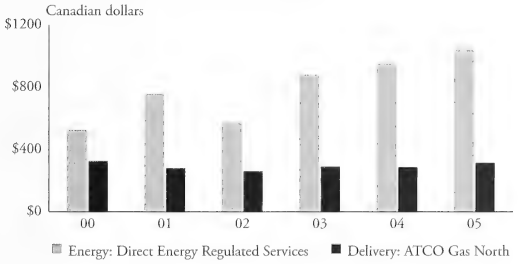
The energy cost is a pass-through of the commodity cost of natural gas. Regulated utilities are not allowed to include a mark-up on the supply cost of gas.

Customers of different gas utility companies pay different prices for natural gas because each company purchases the commodity using a different mix of monthly and daily purchases.

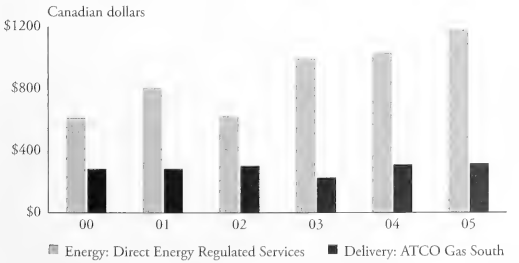
AltaGas Utilities Inc. Energy and Delivery Costs




Direct Energy Regulated Services - North/
ATCO Gas North Energy and Delivery Costs




Direct Energy Regulated Services - South/
ATCO Gas South Energy and Delivery Costs



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